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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/019,025 | 12/26/2001 | Achim Grefenstein | 217712US0PCT | 5931 |

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1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

BISSETT, MELANIE D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1711

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/019,025 | GREFENSTEIN ET AL. | |
| | Examiner | Art Unit | |
| | Melanie D. Bissett | 1711 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-48 is/are pending in the application.
- 4a) Of the above claim(s) 21-24 and 28-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-20, 25-27 and 33-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. <u>1204</u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The rejections from the previous Office action have been maintained and altered to reflect the newly added claims.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 18-20, 25-27, and 33-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over BASF in view of Sakai et al.
4. From a prior Office action:

BASF teaches a laminate film having a substrate layer, an interlayer, and a top layer that is back-cast with a component (1) or (1') (p. 30 lines 4-21). A preferred interlayer is a toughened PMMA with special-effect colorants (p. 23 lines 17-26), where the top layer also comprises PMMA (p. 23 lines 4-11). As the component to be back-molded onto the laminate film, the reference teaches ABS, PP, and PC/PBT plastics (p. 30 lines 14-21). The laminate sheets have top layer thicknesses of 100 µm to 10 mm (0.1-10 mm) (p. 24 lines 18-21). Substrate (molded) layers of 3-9.5 mm are also shown (p. 25 lines 28-30). Regarding the fiber content of the cast plastic, the reference teaches that component (1), referred to above for back-casting onto a two-layer laminate, comprises 5-50% by weight of a reinforcing fiber (p. 19 lines 10-28). Carbon and glass fibers are noted, having lengths of 1-10 µm. The reference also notes the possibility of adding mineral fibers. Regarding the mineral filler limitation of the independent claims, it is the examiner's position that this limitation bears little patentable weight since the claims only require the fibers *may be* mineral fillers. It is the examiner's position that the BASF reference teaches this possibility.

However, BASF does not seem to teach the applicant's claimed fiber lengths. Sakai teaches methods of incorporating fibers into thermoplastic structures, where the weight average fiber length ranges from 1.0-200 mm (abstract). The molding materials are used to form articles including bumper beams and include thermoplastics and fibers used in the BASF invention (col. 1 lines 9-22; col. 5 line 61-col. 6 line 61). The materials are mixed such that breakage of the fibers is minimized, and the fiber lengths are controlled (col. 4 lines 8-26). Fiber lengths above 1.0 mm are employed to improve mechanical properties, including impact strength, flexural strength, and flexural modulus (col. 7 lines 16-26; examples 13-16 and comparative examples 18-20). Although the reference does not specifically indicate fiber length after molding, it is the examiner's position that the reference teaches how to control fiber length in extrusion processes to obtain moldings having fiber lengths *at least partly greater* than 1 mm. Sakai teaches minimization of breakage in

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molding processes; thus, one skilled in the art would expect the reinforced materials (especially having high weight average fiber lengths) to maintain their fiber length (col. 15 lines 13-22). It is the examiner's position that it would have been prima facie obvious to use Sakai's methods of forming fiber-reinforced thermoplastics to control fiber breakage and form articles having improved impact strength, flexural strength, and flexural modulus.

Regarding the back-molding method of either injection back-molding or cast back-molding, it is noted that BASF teaches back-casting (see above), and Sakai teaches injection molding or other known methods (col. 8 lines 18-27). It is the examiner's position that one of ordinary skill in the art would envision back-casting from the BASF reference. Also, it would have been prima facie obvious to use injection molding, since Sakai teaches injection or other molding processes to provide materials with equally improved physical properties. Regardless, it is noted that the claims are in product-by-process format. It is the examiner's position that the articles formed by different back-molding methods would be indistinguishable; thus, the molding process does not provide patentable weight to the claims in light of the cited prior art.

Regarding the single-stage process and direct introduction of the fibers into the back-molding thermoplastic, it is noted that these claims are in product-by-process format. Since the Sakai reference teaches how to incorporate fibers having a specific length into the thermoplastic molding compound without significant breakage, it is the examiner's position that the articles formed by the methods of Sakai's invention would be indistinguishable from those formed by the claimed methods; thus, the mixing process does not provide patentable weight to the claims in light of the cited prior art.

5. Regarding claims 43-48, it is first noted that the films of the BASF reference are intended as paint films for automotive exteriors (p. 28 lines 18-29). The thickness ranges taught by BASF overlap those claimed by the applicant. Since the moldings of the combined invention would have the same structure and composition as those claimed by the applicant, it is the examiner's position that the moldings would also have the same class A finish without painting.

Response to Arguments

6. The applicants argue that one of ordinary skill in the art would expect that the addition of long fibers to a surface finishing layer would degrade the surface finish. The applicant cites a paper from an NSF workshop, which states that appearance

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degradation is most pronounced with long glass fibers. However, it should be noted that the paper seems to define long fibers as having lengths of 12.5-25 mm. The reference does not appear to give guidance for acceptable fiber lengths for forming desired appearances or teach away from the use of fiber lengths much smaller than 12.5 mm. The cited prior art teaches that fibers having lengths as short as 1 mm provide improved impact strength, flexural modulus, and flexural strength. Thus, one skilled in the art would expect that strength would improve with longer fiber lengths and would appear to have no reason to believe that surface properties would be degraded with those in the lower fiber length range.

7. The cited reference also raises concerns about what one skilled in the art would know at the time of applicant's invention. The reference appears to have been presented after applicant's invention. Thus, at the time of applicant's invention, one of skill in the art would not have recognized any disadvantages to using fibers having lengths greater than 12.5 mm. Note also that any references predating the applicant's invention that teach the use of long fiber lengths in such applications could serve to anticipate the applicant's claimed invention regardless of disadvantages shown.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. This application contains claims 21-24 and 28-32 drawn to an invention nonelected with traverse in the paper filed 8/28/03. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mdb



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